## 1. SECTION 1: Identification of the substance/mixture and of the company/ undertaking.

### 1.1. Product Identifier

| | |
|---|---|
| Product Name: | IEX-Phos |
| EC Number: | Not available. |
| CAS Number: | Not available. |
| Product Description: | Not available. |
| Product Type: | Powder |
| Other means of Identification: | Not available. |

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

### 1.3. Details of the supplier of the safety data sheet

IEX Technologies Ltd
Process Unit 5
Wilton Centre
Wilton
Redcar
TS10 4RF

E-mail address of person responsible for the is MSDS:

steve.colley@iexconsultants.org

### 1.4. Emergency Telephone Number

Supplier
Telephone number: +44(0)7713066622
Hours of operation: 24 hours

## 2. SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Product definition: Mono-constituent substance
Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Acute Tox. 4, H302
Acute Tox. 4, H332
Skin Irrit. 2, H315
Eye Irrit. 2, H319
STOT SE 3, H335 (Respiratory tract irritation)
The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

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Classification according to Directive 67/548/EEC [DSD]
Xn; R20/22
Xi; R36/37/38
See Section 16 for the full text of the R phrases or H statements declared above. See Section 11 for more detailed information on health effects and symptoms.

## 2.2. Label elements

Hazard pictograms:

| | |
|---|---|
| Signal word: | Warning |
| Hazard statements: | Harmful if swallowed or if inhaled.<br>Causes serious eye irritation.<br>Causes skin irritation.<br>May cause respiratory irritation. |

Precautionary statements

| | |
|---|---|
| Prevention Response: | Wear protective gloves.<br>Wear eye or face protection.<br>Avoid breathing dust.<br>Get medical attention if you feel unwell. |

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

| | |
|---|---|
| Storage: | Store locked up. |
| Disposal: | Not applicable. |

| | |
|---|---|
| Hazardous ingredients: | IEX-Phos – Phosphinic Acid Modified Silica Gel |
| Supplemental label elements: | Not applicable. |

Annex XVII- Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Special packaging requirements

| | |
|---|---|
| Containers to be fitted with child-resistant fastenings: | Not applicable. |
| Tactile warning of danger: | Not applicable. |

## 2.3. Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII:

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Not applicable.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:
Not applicable.

Other hazards which do not result in classification:
Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat. Prolonged or repeated contact may dry skin and cause irritation.

## 3. SECTION 3: Composition/information on ingredients

### 3.1 Substances

Substances: Mono-constituent substance

| Product / Ingredient Name | Identifiers. | % | Classification 67/548/EEC | Classification Regulation (EC) No. 1272/2008 [CLP] | Type |
|---|---|---|---|---|---|
| Modified Silica Gel with Phosphinic Acid Functionality | - | 95-100 | Xn; R20/22 Xi; R36/37/38 | Acute Tox. 4, H302<br>Acute Tox. 4, H332<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335 (Respiratory tract) | A |

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.
Type
[A] Constituent
[B] Impurity
[C] Stabilizing additive
Occupational exposure limits, if available, are listed in Section 8.

## 4. SECTION 4: First aid measures

Eye contact: Causes serious eye irritation.
Inhalation: Harmful if inhaled. May cause respiratory irritation.

4.1 Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for

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breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison centre or physician.

If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Clean clothing and shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison centre or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous for the person providing aid to give mouth-to-mouth resuscitation.

### 4.1. Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific treatment.
Specific treatments: No specific treatment.

## 5. SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing: None known.

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### 5.2. Special hazards arising from the substance or mixture

Hazards from the substance or mixture: No specific fire or explosion hazard.

Hazardous thermal decomposition products: Decomposition products may include the following materials:

1) carbon dioxide
2) carbon monoxide

### 5.3. Advice for firefighters

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Additional information: None identified.

## 6. SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### 6.2. Environmental

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains precautions and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### 6.3. Methods and materials for containment and cleaning up

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Small spill: Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill: Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

### 6.4. Reference to other

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

## 7. SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1. Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

### 7.3. Specific end use(s)

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Recommendations: Not available.
Industrial sector specific solutions: Not available.

## 8. SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker or exposure or environmental releases.

### 8.1. Control parameters

| Product / Ingredient Name | Exposure Limit Value |
|---|---|
| No exposure limit known. | - |

Recommended monitoring procedures:
If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres- Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres- Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482.

(Workplace atmospheres- General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs: No DNELs/DMELs available.
PNECs: No PNECs available.

### 8.2. Exposure controls

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Ensure that eyewash stations and safety showers are close to the workstation location.

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Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection

Hand Protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9. SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance

| | |
|---|---|
| Physical state: | Solid. [Powder.] |
| Colour: | Off-white. |
| Odour: | Characteristic. |
| Odour threshold: | No available. |

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| | |
|---|---|
| pH: | Not available. |
| Melting point/freezing point: | Not available. |
| Initial boiling point and boiling range: | Not available. |
| Flash point: | Not applicable. |
| Evaporation rate: | Not available. |
| Flammability (solid, gas): | Not available. |
| Upper/lower flammability or explosive limits: | Not available. |
| Vapour pressure: | Not available. |
| Vapour density: | Not available. |
| Relative density: | Not available. |
| Solubility(ies): | Insoluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/ water. | Not available. |
| Auto-ignition temperature: | Not available. |
| Decomposition temperature: | Not applicable. |
| Viscosity: | Not applicable. |
| Explosive properties: | Not available. |
| Oxidising properties: | Not available. |
| Minimum ignition energy (mJ): | Not available. |

### 9.2. Other information

No additional information.

## 10. SECTION 10: Stability and reactivity

### 10.1. Reactivity

No specific test data related to reactivity available for this product or its ingredients.

### 10.2. Chemical stability

The product is stable.

### 10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

### 10.4. Conditions to avoid

No specific data.

### 10.5. Incompatible materials

No specific data.

### 10.6. Hazardous decomposition products

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Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### 11.1.1. Acute Toxicity

| Product / Ingredient Name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| - | - | - | - | - |

Conclusion/Summary: Harmful by inhalation and if swallowed.

#### 11.1.2. Sensitisation

Conclusion/Summary
Skin : Based on available data, the classification criteria are not met.
Respiratory : Based on available data, the classification criteria are not met.

#### 11.1.3. Mutagenicity

Conclusion/Summary: Based on available data, the classification criteria are not met.

#### 11.1.4. Carcinogenicity

Conclusion/Summary: Based on available data, the classification criteria are not met.

#### 11.1.1. Reproductive Toxicity

Conclusion/Summary: Based on available data, the classification criteria are not met.

#### 11.1.2. Teratogenicity

Conclusion/Summary : Based on available data, the classification criteria are not met.

#### 11.1.3. Specific target organ toxicity (single exposure)

| Product / Ingredient Name | Category | Route of Exposure | Target Organ |
|---|---|---|---|
| Modified Silica Gel with Amino Functionality. | Category 3 | Not Applicable. | Respiratory tract irritation. |

#### 11.1.4. Specific target organ toxicity (repeated exposure)

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Not available.

### 11.1.5. Aspiration hazard

Information on the likely routes of exposure: Not available.

### 11.1.6. Potential acute health effects

Eye contact: Causes serious eye irritation.
Inhalation: Harmful if inhaled. May cause respiratory irritation.
Skin contact: Causes skin irritation. Defatting to the skin.
Ingestion: Harmful if swallowed. Irritating to mouth, throat and stomach.

### 11.1.7. Symptoms related to the physical, chemical and toxicological characteristics

Potential immediate effects: Not available.
Potential delayed effects: Not available.

### 11.1.8. Long term exposure

Potential immediate effects: Not available.
Eye contact: Adverse symptoms may include the following: pain or irritation watering redness.
Inhalation: Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact: Adverse symptoms may include the following: irritation redness dryness cracking.
Ingestion: No specific data.

### 11.1.9. Delayed and immediate effects and also chronic effects from short and long term exposure Short term exposure

Potential delayed effects: Not available.

### 11.1.10. Potential chronic health effects

Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

### 11.1.11. Conclusion/Summary

General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/ or dermatitis.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.

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Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.
Other information: Not available.
Other adverse symptoms: No known significant effects or critical hazards.

## 12. SECTION 12: Ecological information

### 12.1. Toxicity

| Product / Ingredient Name | Result | Species | Exposure |
|---|---|---|---|
| - | - | - | - |

Conclusion/Summary: Not available.

### 12.2. Persistence and Degradability

| Product / Ingredient Name | Test | Result | Dose / Inoculum |
|---|---|---|---|
| - | - | - | - |

Conclusion/Summary: Not available.

| Product / Ingredient Name | Aquatic Hals-lift | Photolysis | Biodegradability |
|---|---|---|---|
| - | - | - | - |

Conclusion/Summary: Not available.

### 12.3. Bioaccumulative potential

| Product / Ingredient Name | $LogP_{ow}$ | BCF | Potential |
|---|---|---|---|
| - | - | - | - |

Conclusion/Summary: Not available.

### 12.4. Mobility in soil

Soil/water partition coefficient ($K_{OC}$): Not available.
Mobility: Not available.

### 12.5. Results of PBT and vPvB assessment

PBT: Not applicable.
vPvB: P: Not available. B: Not available. T: Not available.
Not applicable. vP: Not available. vB: Not available.
No known significant effects or critical hazards.

### 12.6. Other adverse effects

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No known significant effects or critical hazards.

## 13. SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1. Waste treatment methods

#### 13.1.1. Product

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Empty containers or liners may retain some product residues. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Return accumulated waste material to the refinery for metal recovery, or dispose of in accordance with local and national regulations.

Hazardous waste: The classification of the product may meet the criteria for a hazardous waste.

#### 13.1.2. Packaging

Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## 14. SECTION 14: Transport information

| | ADR/RID | ADN | IMDG | IATA |
|---|---|---|---|---|
| 14.1. UN Number | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| 14.2. UN Proper shipping name. | - | - | - | - |
| 14.3. Transport hazard class(es) | - | - | - | - |

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| | | | | |
|---|---|---|---|---|
| 14.4. Packing group | - | - | - | - |
| 14.5. Environmental Hazards | No. | No. | No. | No. |
| Additional Information | - | - | - | - |

14.6. Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that people transporting the product know what to do in the event of an accident or spillage.

14.7. Transport in bulk according to Annex II of

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

## 15. SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture.

15.1.1. EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV- List of substances subject to authorization

Annex XIV: None of the components are listed.
Substances of very high concern: None of the components are listed.
Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

15.1.2. Other EU regulations

Europe inventory: Not determined.
Seveso II Directive: This product is not controlled under the Seveso II Directive.

15.1.3. International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals: Not listed.
Montreal Protocol (Annexes A, B, C, E): Not listed.
Stockholm Convention on Persistent Organic Pollutants: Not listed.
Rotterdam Convention on Prior Inform Consent (PIC): Not listed.
UNECE Aarhus Protocol on POPs and Heavy Metals: Not listed.

15.1.4. International lists

National inventory

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| | |
|---|---|
| Australia: | Not determined. |
| Canada: | Not determined. |
| China: | Not determined. |
| Japan: | Not determined. |
| Malaysia: | Not determined. |
| New Zealand: | Not determined. |
| Philippines: | Not determined. |
| Republic of Korea: | Not determined. |
| Taiwan: | Not determined. |
| United States: | United States inventory (TSCA 8b): Not determined. |

### 15.2. Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

## 16. SECTION 16: Other information

### 16.1. Abbreviations and acronyms

ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

### 16.2. Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

| | |
|---|---|
| Full text of abbreviated H statements: | Not applicable. |
| Full text of classifications [CLP/GHS]: | Not applicable. |
| Full text of abbreviated R phrases: | Not applicable. |
| Full text of classifications [DSD/DPD]: | Not applicable. |
| Date of printing: | 15/10/2010 |
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| Version: | 1.03 |

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